

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/34163

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C07H 21/04  
US CL : 435/6, 91.2; 536/23.1, 24.3

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6, 91.2; 536/23.1, 24.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Medline, google

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MASSION, P.P. Genomic Copy Number analysis of non-small cell lung cancer using array comparative genomic hybridization: Implications of the phosphatidylinositol 3-Kinase Pathway. July 2002, Vol. 62, 3636-3640.	1-14
Y	OHIRA, T. Up-regulated gene expression of angiogenesis factors in post-chemotherapeutic lung cancer tissues determined by cDNA microarray. April 2002, Vol. 9: 723-728.	1-14

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

### \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

09 December 2005 (09.12.2005)

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Date of mailing of the international search report

17 FEB 2006

Authorized officer

Sally Sakellaris

Telephone No. 571-272-1600

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
JEFFREY M. GREENMAN  
BAYER PHARMACEUTICALS CORPORATION  
400 MORGAN LANE  
WEST HAVEN, CT 06516

**PCT**

REC'D 20 FEB 2006

WIPO

PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>5176-PCT</b>		Date of mailing (day/month/year) <b>17 FEB 2006</b>
<b>FOR FURTHER ACTION</b> See paragraph 2 below		
International application No. <b>PCT/US04/34163</b>	International filing date (day/month/year) <b>01 October 2004 (01.10.2004)</b>	Priority date (day/month/year) <b>03 October 2003 (03.10.2003)</b>
International Patent Classification (IPC) or both national classification and IPC <b>IPC(7): C12Q 1/68; C07H 21/04 and US Cl.: 435/6, 91.2; 536/23.1, 24.3</b>		
Applicant <b>BAYER PHARMACEUTICALS CORPORATION</b>		

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I      Basis of the opinion
- ☐ Box No. II      Priority
- ☐ Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV      Lack of unity of invention
- ☒ Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI      Certain documents cited
- ☐ Box No. VII      Certain defects in the international application
- ☐ Box No. VIII      Certain observations on the international application

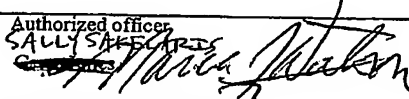
**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion <b>30 January 2006 (30.01.2006)</b>	Authorized officer <b>SALLY SAKS</b>  Telephone No. 571-272- <del>1600</del> <b>1600</b>
--	---	--

Form PCT/ISA/237 (cover sheet) (April 2005)

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No. \_\_\_\_\_  
PCT/US04/34163

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☒ a sequence listing  
☒ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☒ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☒ filed together with the international application in electronic form.  
☒ furnished subsequently to this Authority for the purposes of search.

3. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US04/34158

**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims <u>7-14</u>	YES
	Claims <u>1-6</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-14</u>	NO
Industrial applicability (IA)	Claims <u>1-14</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and explanations:**

Claims 1-14 lack an inventive step under PCT Article 33(3) as being obvious over Massion et al. in view of Ohira et al. Massion et al. teach a method for providing a patient diagnosis for lung cancer, comprising the steps of:  
(a) determining the level of expression of one or more genes or gene products in a first biological sample taken from the patient;  
(b) determining the level of expression of one or more genes or gene products in at least a second biological sample taken from a normal patient sample; and  
(c) comparing the level of expression of one or more genes or gene product in the first biological sample with the level of expression of one or more genes or gene products in the second biological sample; wherein a change in the level of expression of one or more genes or gene products in the first biological sample compared to the level of expression of one or more genes or gene products in the second biological sample is a diagnostic of the disease.  
Specifically Massion et al. teach genomic copy number analysis of non-small cell lung cancer using array comparative genomic hybridization: Implications of the phosphatidylinositol 3-Kinase Pathway.  
Massion et al. do not teach the limitation of claim 7 for example including the step of the sample coming from a patient undergoing anti-cancer agent treatment.  
However, Ohira et al. teach the use of post-chemotherapeutic tissues from lung cancer patients (see abstract for example).  
Therefore, the limitations not directly taught in Massion et al. would be obvious over the teachings of Ohira et al.

Claims 1-14 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.